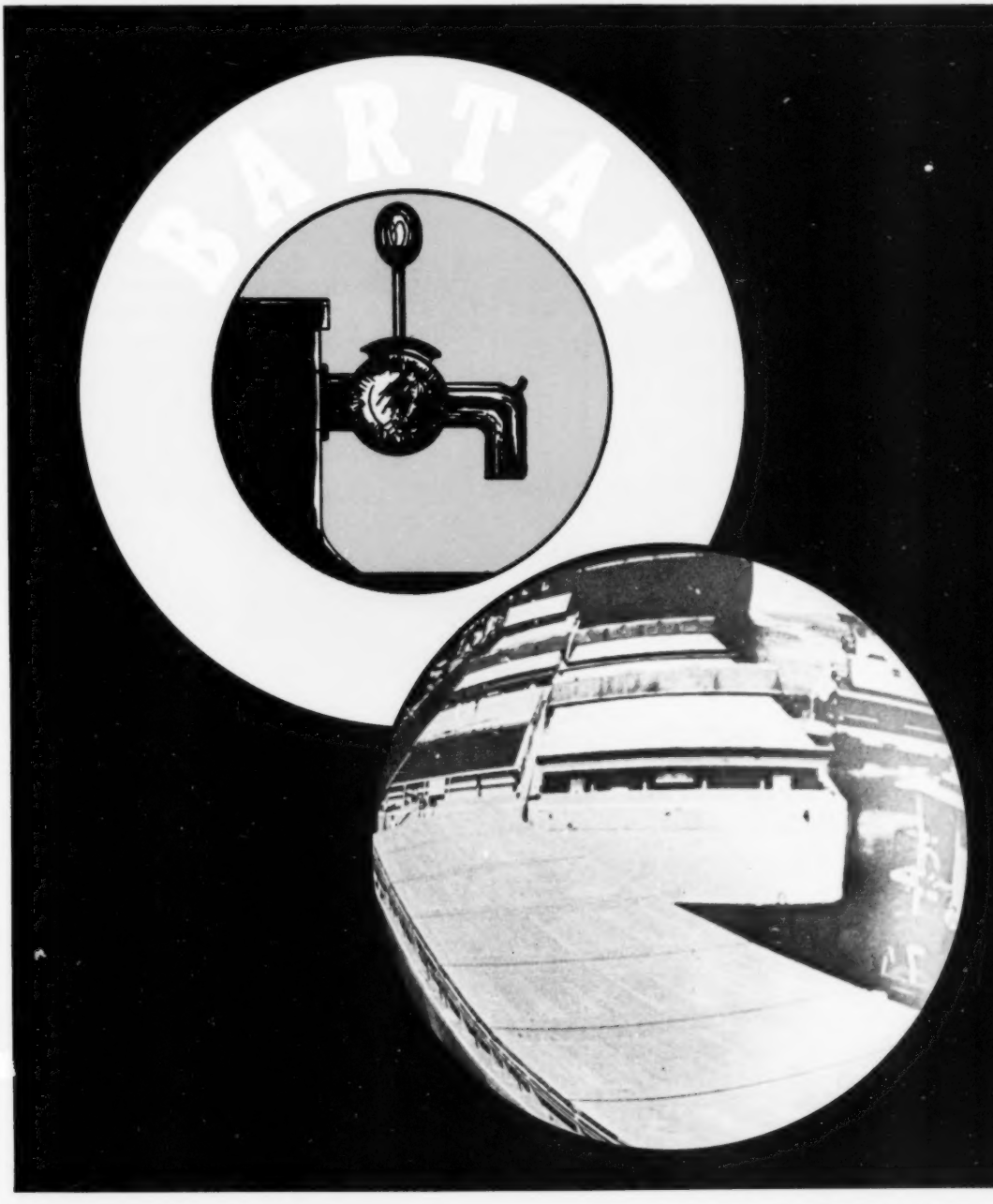
SEALIFT



JULY 1973

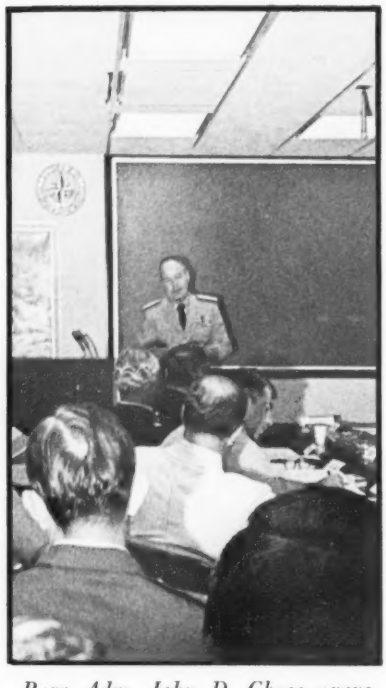
In the past few years, significant advancements have been made in the field of sea transportation. What has been termed the "sealift revolution" began with pioneering by U.S. companies in the field of containerization.

Container technology emphasized the need to consider the entire transportation industry as an entity—although composed of diverse elements—which demands that managers focus their attention on intermodal movement of goods and materials. Our worldwide distribution system no longer is composed of a series of sea, land and air links. It is an indivisable whole.

The ongoing revolution has been accelerated by introduction of barge carriers. One might describe barge carriers as a type of container ship, only major difference being that the barge containers can be towed up and down inland rivers, or along coastal waterways.

Impact on transportation traffic patterns already has been great, with many more changes certain to follow. One potential —which we in the military are trying to develop—is application of barges and barge ships to fulfillment of military mobility needs.

That is why MSC has been involved for the past year in an effort to study all possible uses of barge carriers. We now are directing an effort known as BARTAP, Barge Transportation Appraisal Program, which includes members of the Army, Navy, Marines and Air Force as participants.



Rear Adm. John D. Chase opens the symposium.

By conducting a series of tests, evaluating lessons learned and techniques developed, and by meeting periodically to summarize our findings and develop specific recommendations, we have made considerable progress. Already, we have used barge carriers to deliver ammunition. We have moved military aircraft, household goods, vehicles and a variety of other items in LASH and Seabee ships.

But we need to learn even more about utilization of the barge carriers because they and other new ships in the merchant marine inventory represent the assets we must rely upon in a future emergency.

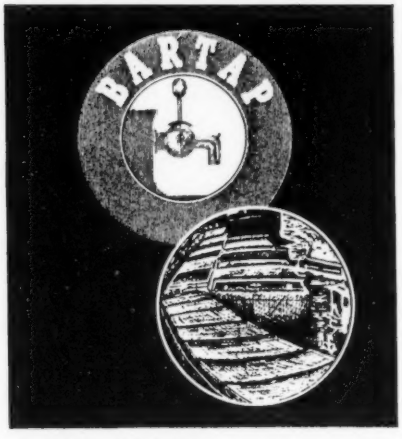
That is why MSC recently hosted a Military Barge Design and Shore Handling Symposium. Attending were more than 65 representatives of all Department of Defense services. During that two-day symposium, a number of presentations were made by those involved in the study of barge carriers, and by commercial representatives of the maritime industry. Workshops were held and ideas were freely exchanged and discussed.

Results of these discussions were the recommendations summarized in this issue of Sealift. I am certain that the reports will be of interest to the maritime industry, to members of the Defense community, and to employees of Military Sealift Command.

At the same time, I would hope that it might serve another purpose—to stimulate even greater interest in the subject, and the development of new ideas, new concepts, new ways of utilizing the maritime assets which the sea transportation industry is developing. If we are to revitalize the U.S. Merchant Marine and increase its capability to serve as the Fourth Arm of Defense, we must learn to effectively employ the assets we will have at our disposal in any future emergency.

John D. Chase

Commander, Military Sealift Command



FRONT COVER:
Design by Bonnie D. Hooven

SEALIFT

PUBLISHED BY THE UNITED STATES NAVY'S
MILITARY SEALIFT COMMAND

Vol. XXIII No. 7 Washington, D.C. July 1973

Features:

Symposium wrap-up

Page 4

ACVs

Page 13

Barge ships

Page 18

Marine shelters

Page 22

Other Features:

Trans-hydro craft—page 9; Army boxes—page 11; Fiberglass barges—page 16; PFEL and the LASH—page 20; Charger Log VII—page 25; USREDCOM—page 26.

REAR ADMIRAL JOHN D. CHASE
Commander,
Military Sealift Command

LARRY C. MANNING
Legislative and Public Affairs Officer

LOUIS R. GRANGER
Public Affairs Officer

JOSN HOWARD L. ROSENBERG
Editor

LYNN O'CONNOR

BONNIE D. HOOVEN
Graphics

RUSS EGNOR
Photo

ED NURENBERG
Contributing Staff

Sealift, monthly magazine of the U.S. Navy's Military Sealift Command, is published in accordance with Department of the Navy Publications and Printing Regulations (NAVEXOS P-35). Opinions expressed are not necessarily those of the Navy Department. All original material may be reprinted providing credit is given Sealift. Address all pictures and correspondence to Legislative and Public Affairs Office, Military Sealift Command, Department of the Navy, Washington, D.C. 20390.

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Price, 50 cents (single copy). Subscription price, $5.50 per year; 75 cents additional for foreign mailing.

What's it all about?

Sealift summarizes the major presentations, the recommendations and conclusions that grew from the military barge design and shore handling symposium.

Two conferences held at Military Sealift Command headquarters in late May and early June illustrate the enlarging role of the command in development of contingency plans and capability, and in maintaining an immediately responsive force which can meet future sealift requirements of Department of Defense.

First was a military barge design and shore handling symposium attended by more than 65 representatives of all the military services, plus commercial elements of the transportation industry. Second was a regular meeting of the Joint Sealift Movements Board, or JSMB. That group, sponsored by the U.S. Readiness Command, reviews sealift deployment problems and maps exercises necessary to provide realistic training in sea deployment for military units based in the Continental United States.

This issue of Sealift magazine is devoted to a report on the symposium held at MSC headquarters May 29–30. Included are summaries of the major presentations given, plus a review of conclusions reached and recommendations made by those taking part in the barge design and shore handling symposium.

The symposium itself was a part of another program launched by MSC in August 1972. Known as BARTAP, or Barge Transportation Appraisal Program, it seeks to assure that the military services are able to reap maximum benefit from barge carrying ships in the merchant marine inventory.

As Rear Adm. John D. Chase put it when he welcomed the Army, Navy, Marine and Air Force representatives to the 1972 BARTAP conference, the purpose of the program is "to identify the potential military applications of barge carrier sealift systems so that we in Defense can use them to greatest possible advantage in all situations, in peacetime and during war."

Since that time, the services have extensively evaluated capability of the barge carriers in a variety of operating environments. LASH or lighter-aboard-ship carriers have delivered ammunition to the Far East and Europe and are used by Prudential Grace Lines to provide regular service to Moroccan ports where few port facilities exist and limited handling equipment is available. This barge-carrier service, under MSC shipping agreement, has provided Defense realistic information on ability of the LASH to operate in an austere environment.

In addition, Seabees operated by Lykes Brothers have delivered household goods, vehicles, aircraft, containers and general cargo on scheduled commercial runs between the Gulf Coast and Europe. In one significant operation, a Lykes Seabee moved all equipment of an Army helicopter company from the U.S. Gulf Coast to Germany, using inland waterways at both ends of the run to provide almost portal-to-portal delivery.

In another test at Coronado, Calif., steel and fiberglass LASH barges chartered by Military Sealift Command were used to determine their applicability in amphibious operations. With one phase of that West Coast test complete, a second is to be held in September. In the second part of the study, helicopters will fly cargo from barges to the beach.

During the May 29–30, MSC-hosted symposium, emphasis was on two major objectives, both stemming from the ultimate BARTAP purpose of determining how barges might effectively be employed in contingencies. The first focused on how to employ existing barges, all of which are rectangular and non-self-propelled, in an emergency requiring delivery and support of a large number of troops.

Second area for discussion concerned design changes which might make barges even more compatible with military needs. Changes considered ranged from simple modification of existing designs to development of entirely new configurations for LASH and Seabee barges.

The two day symposium was organized into three major parts. It began with executive briefing sessions. Presentations given included briefings on adaptability of barges to movement of Army division equipment, capability of barges in over-the-beach amphibious operations, and Charger Log VII. That was an exercise in which cargo was delivered by helicopter from the LASH Italia to the SS San Diego while both ships were moving at more than 20-knot speeds off the coast of Spain. Helos also were used to unload barges in the port at Rota.

Other briefings covered state of the art in manufacture of fiberglass barges, and two presentations on surface effect craft. One dealt with Army logistic over-the-shore needs and the other with capability of existing air-cushion vehicles to move cargo from barge to beach.

Another presentation concerned U.S. Marine efforts to design a family of standardized shelters and equipment to transport them from ship to shore in support of Marine operations. A final presentation, this one by the U.S. Readiness Command, introduced barge symposium participants to the missions and roles of the Joint Sealift Movements Board which met at MSC headquarters May 31 and June 1.

Working group discussions made up the second part of the symposium, with attendees meeting in two primary groups. One, headed by Donald Gardner, MSC deputy operations officer, covered ability of tugs to move barges, varied uses of amphibious craft, methods of discharging cargo from barges, types of handling equipment needed, types of breakwaters and their advantages, removal of bulky hatch covers from barges and problems of barge mooring. A final topic of discussion for this group stemmed from problems posed by special cargo requirements, including ammunition, fuel, vehicles and containers.

The second working group, headed by Richard Askren, who directs the MSC ships concept and development division, concerned itself with barge design problems.

Covered in discussions among members were such factors as interior and exterior size limitations, hull configurations of barges, propulsion systems which could be incorporated into the barges, and problems of hatch cover removal in a contingency situation. This group also dealt with problems posed in meeting requirements for delivery of fuel, ammo, vehicles, and containers, looking at those problems from a design viewpoint.

Scenario for Don Gardner's barge shore handling group assumed that the worst possible conditions prevailed—operation of LASH and Seabee ships in a contingency where no docks or handling equipment were available ashore. And, participants probed the nature of problems likely to be encountered in an assault, in follow-on support of the assault troops and in resupply of those troops once a beachhead was established.

Availability of tugs—and differences in size and configuration of Army, Navy and commercial tugs—were

Donald M. Gardner, left, background, chaired the barge shore handing working group. He is MSC's deputy operations officer.

important considerations, as were the ability of LASH and Seabee to discharge cargo in rough seas. Opening of the cargo-discharge bag of challenges sparked considerable comment on relative merits of steel pontoon causeways, floating unloading platforms such as DeLong piers, fixed barges, and self-sustaining ships which could be used to help unload barges. Also explored were possibilities of using dirigibles to lift cargo from barge to shore and adaptation of winches which would reel in a barge much like a fisherman lands a prize catch. Feasability of submersible barges also was discussed by this group. Another area which stretched the imaginative minds of the participants concerned the obvious need for barge marshalling systems and facilities. Breakwaters for protection of the craft, security of cargo, and advantages and disadvantages of buoys all were discussed.

Those attending agreed that there is an obvious need to develop more effective means of moving and discharging barges in a contingency environment. And participants also concluded that lighterage would need to be provided to transfer cargo from barge to shore. Support systems needed include amphibious craft of varied types, mobile causeways, trucks, and helicopters. Challenge will be, in a contingency, to provide a means of bridging the gap between an off-shore barge and the beach, over the water and through the air.

Richard R. Askren, director, Ships Concepts Division at MSC, chaired the military barge design working group.

Specific recommendations made by the barge shore handling conferees included:

- Support of efforts by the Marine Corps and Naval Facilities Engineering Command to develop and test self-propelled causeways and an elevated causeway platform.
- Continued development of concepts and techniques for handling barges in forward areas, in-stream or ashore, with emphasis on making systems as compatible as possible with existing container handling facilities.
- Review of contingency plans to identify types of cargo which can be delivered effectively via barge carriers.

Emphasis of the group considering barge designs was on two areas—usefulness of existing designs and modifications needed to make barges a more effective delivery vehicle.

A number of design recommendations were made. Among them was addition of tie-downs in barge decks in a 6x6 or 6x8 foot grid pattern. Participants felt these should be added to existing commercial barges even if cost had to be subsidized by the military, since they would greatly increase military capability of the barges in peacetime.

Improvements also were urged in hatch cover designs to provide better weather seals during ocean tows. It was also felt that hatch covers should be standardized. At present several types are used, some hinged and others lift-off types. Fiberglass hatch covers also got a strong endorsement, because of their lighter weight. However, other recommendations in this area were deferred until results of the next Coronado test are in. Use of helos to unload barges in that test is expected to provide realistic data on effect of helicopter downwash on hatch-cover removal.

The design group also suggested that MSC carry both LASH and Seabee barges on the Seabee ship it now seeks by build and charter procurement. MSC plans to bareboat charter both a LASH and a Seabee to upgrade the command's controlled fleet which provides the base for expansion of sealift capability in wartime.

Design experts felt a number of maneuverability problems already had been identified as a result of BARTAP evaluations. Among them were poor directional stability and a tendency of barges to squat and submerge. Another problem, again identified as a result of BARTAP evaluation, concerns ability of tugs to tow and maneuver existing barges. Conferees agreed that 6 knots was a minimum tow speed. Towed at a slower rate, as one participant reported, barges present an ideal target. "One rifleman could walk along a river bank and maintain a steady fire

on-target," he said. In some instances, as previously reported, available tugs simply have not had sufficient horsepower to tow or maneuver LASH and Seabee barges. It was suggested that the military might help solve this problem by using LCUs or LCM–8s as tow boats. The LCM–8 is powered by two 370 horsepower diesel engines.

Experience dictates, participants suggested, that a ladder be located near the center hatch of existing designs to help speed up loading-unloading of military cargo.

The design group gave considerable attention to what they labeled "special purpose" barges. First on their list was one designed for use as a floating fuel and water storage facility. Such a barge is needed, they said, to support airfields and tank truck depots or to provide emergency water supplies. Fiberglass barges, because of their honeycombed double skin construction, insulating qualities and lighter weight, were considered ideal for this function.

Discussion of feasability of barges equipped with ramps for over-the-beach delivery resulted in a wide range of opinions. However, in the end, it was suggested that there were no commercial applications for such barges—making them more costly for Defense Department—and that trans-hydro craft now operating or being developed would be able to handle logistics-over-the-shore needs.

Refrigerated barges were considered a necessity, and should be self-sustaining, according to recommendations by the design group. Again, it was felt that fiberglass barges had a clear advantage over steel barges for this use.

Considerable discussion was focused on use of barges as troop carriers, as mobile hospital facilities, and a variety of similar support functions. However, the group agreed that efforts along these lines would duplicate those already going on, notably those involving development of containers for similar uses.

A vital employment for barges is the use of the LASH barge as a container which can accomodate both 35 and 40-foot flat racks. Flat racks, containers with the sides and tops off and equipped with corner posts, have proven to be the most effective means of moving vehicles and heavy equipment on container ships. Unfortunately, there is little commercial requirement for flat racks and less than 100 exist. Result is that Defense would probably have to fund manufacture of flat racks if they were to be added to the Defense inventory. However, purchase of flat racks would be feasible for the LASH and Seabee ships MSC now is seeking via the build and charter route. They would provide an extra dimension for the two barge carriers MSC plans to charter.

These two ships also would offer special military advantages—the capability to deliver both LCUs and LCMs

Maj. Gen. Clarence L. Lang, then commander of Military Traffic Management and Terminal Service and Rear Adm. John D. Chase, commander of Military Sealift Command.

where needed and to carry barges of conventional configuration but equipped for special purpose usage.

In summary sessions winding up the two-day symposium, a number of special comments and recommendations were made by those attending. Among them was a suggestion that Defense employ barge carriers it may operate primarily in joint training exercises and development of new capabilities, using scheduled carriers for point to point delivery of military cargo. It was suggested that when used as point-to-point delivery systems, Defense controlled barge ships should be used primarily for vehicle movement, unit deployments, and for delivery of container compatible cargoes.

Provoking a number of comments in the summary sessions following the reports from the two working groups, was the fact that barge carriers require cargo handling methods similar to those for break bulk ships. Trend, worldwide, has been toward development of port material handling systems which correlate with container ships systems. Result is a need to provide unloading systems and manpower for two distinctly different types of ships.

However, as was pointed out, barge ships have a distinct advantage in military emergencies which are almost certain to involve operations in relatively primitive port environments. Although it's axiomatic that costs are going to be higher if peacetime service is provided both by container ships and barge carriers, that is the price, participants concluded, Defense must expect to pay if the military services are to tap the contingency potential of barge carriers now entering the maritime inventory in substantial numbers.

But, barge carriers do have inherent peacetime advantages. A typical example stems from their ability to handle unit moves such as the recent one in which an Army company's equipment was deployed across the Atlantic and up the Rhine almost to the final point of destination. This type of move is obviously more economical than one requiring several loading-unloading operations and transfer of cargo to several transport modes.

From the MSC point of view, one highlight of the two-day symposium was the strong support expressed by participants for the command's 1 by 1 program, the build and charter of a LASH and a Seabee for operation as part of the command's controlled fleet.

Effective employment of these two ships will be the central theme of another all-service conference on barge carriers and their military employment. Tentatively scheduled for October, it will focus on identification of current and long-term sealift requirements of the military services so that commitments can be secured and plans made for a series of contingency exercises. During the Vietnam years, exercises which involved military sealift support forces were primarily of the computer or paper type. Now, with demands of that long war behind them, Defense officials are turning more attention to development of a sealift force which can meet future needs of the Army, Navy, Marines and Air Force. □

Coffee break at the conference.

On or over

If it moves on or over water it's classified as a trans-hydro craft.

"To round out Army efforts to modernize our equipment and develop unit capability to handle containerized cargo and equipment under any and all conditions, a study of the trans-hydro craft was initiated."

The speaker was John R. Stapleton, directorate of Army transportation. The subject, the trans-hydro craft. Trans-hydro refers to craft that move cargo on or over water, including air cushioned vehicles, helicopters, beach discharge lighters (BDLs), LCUs and LCMs. Purpose of the study, Stapleton reported, was to determine the Army's lighter and harbor craft requirements in 1975 and through 1985. Stapleton continued that the Army is attempting to determine what equipment is capable of moving loaded 20-foot containers weighing up to 15 tons.

Purpose of the trans-hydro craft Army seeks is to support and supply over-the-beach operations. Several of the

John Stapleton is a transportation specialist assigned to the office of the director of Army transportation. Holder of a BS from Florida Southern with a major in economics, he also has an MBA from Syracuse University. A former Army transportation officer and still a member of the Army reserve, he was secretary of the Army study advisory group on trans-hydro craft.

conventional amphibious craft now used in over-the-beach landings will be phased out by 1975, according to Stapleton.

Some will be replaced by air-cushioned-vehicles (ACVs) such as the Bell Voyageur (See Michael W. Vincent's presentation) although helos now in use will for the most part continue to be employed as lighters. "Use of helos has demonstrated," said Stapleton, "that though weight limited, they have the capability to move lightly loaded containers in environments and weather conditions that preclude the employment of more conventional lighters." A heavy lift helicopter capable of handling 22½-ton loads now is being developed for Army use.

HEAVY LIFT: The helo is a useful trans-hydro craft still coming into its own.

The transition period will be between 1975 and 1980. Stapleton said that during this period the LARC 5 and LARC 15, both wheeled amphibians, will be replaced by air cushioned vehicles. The BDLs will be replaced by a smaller, more flexible beach lighter. The rest of the Army fleet will remain unchanged.

Is it all possible? Yes, according to Stapleton, who added, "The time phasing is practical and will enable us to modernize the fleet while still getting maximum usage out of existing assets." He said, "The trans-hydro recommendations were based on much more detailed considerations than presented here plus computer application to the many variables such as environment and cargo mixes affecting craft employment."

Stapleton concluded his presentation by saying, "Army fleet recommendations are firm. The documentation for the study which support the recommendations is on the way to the Army staff and worldwide commands for review. □

Boxing in the Army

Army's Transportation Engineering Agency probes uses of containers in moving unit equipment.

"Rapid replacement of low-volume break-bulk ocean carriers by high capacity modern ships has created significant problems which impact on Army capability to strategically deploy its forces."

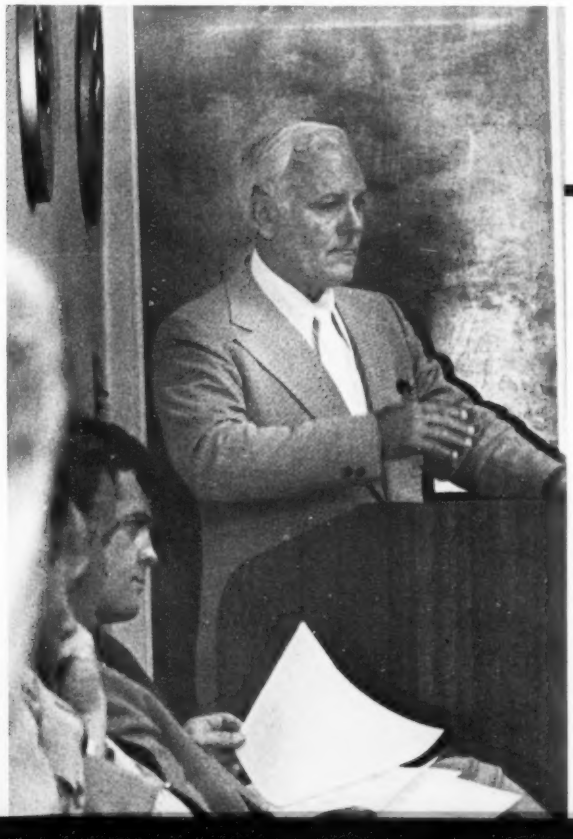
Typical, Richard Hutson told symposium participants, is the Army feeling that the container ship will be the backbone of the U.S. merchant fleet between 1976 and 1980 which means that all other ship systems "must be considered supplemental."

Result of this forecast was an Army analysis of ability of container ships to move unit equipment. Conclusion was that necessary equipment could be transported in container ships, but "at a serious degradation of ships' space." That conclusion led to a series of Army loading studies aimed at identifying transportability problems—and development of means to overcome them.

Studies concentrated on adaptability of container, roll-on, roll-off and barge carrying ships to requirements of five Army divisions. The simulated force included two infantry divisions and reinforced armored, airmobile and mechanized divisions.

Requirements for each reinforced division totaled about 48,000 troops and a half million measurement tons of unit cargo. However, in the study reported on by Hutson, troop loadings were not considered.

"About 25 per cent of the unit equipment was found to be containerizable in closed containers," Hutson said, adding that the group then tried to "find some means of increasing utilization of container ship systems."



The flat rack was the answer they came up with. A flat rack might be described as a closed container with the sides and top taken off. Because they have corner posts,

Richard K. Hutson is director of the Army's Transportation Engineering Agency, Fort Eustis, Virginia, a sub-command of the Military Traffic Management and Terminal Service. Hutson, who served with the 7th Infantry Division in World War II, has held his present position since 1967. He retired from the Army in 1966, having filled a variety of jobs in the transportation field. A graduate of the University of Nebraska, he also has attended the Army War College.

flat racks can be stacked six-high, just like normal containers. Because no internal blocking or bracing is needed the entire 8-foot width is usable.

"Catch is, however, that only a few hundred flat racks exist in the transportation inventory. They are extremely versatile for military use, but little needed in commercial transportation."

In the analysis of the five division movement needs, requirements were established for 23,000 flat rack loads. Using 35-foot flat racks, 55 per cent of unit equipment could be containerized—double the percentage with closed containers.

Their use "increased the average tonnage per ship by 30 per cent, from about 21 to 27 thousand measurement tons. And ship sailings would be decreased by 25 per cent, from 121 to 91, to move the division equipment." Number of ships required also was cut, from 26 to 20 when flat racks were used.

Problems remained, however, as Hutson told the symposium attendees. One was the fact that only a few hundred flat racks exist when more than 23,000 loads were needed in the simulated exercise. He estimated a need for 12,000 flat racks.

A second problem was that of loading the 45 per cent of Army equipment which could not be containerized. In the five division force, some 20,815 pieces of organizational equipment exceeded the flat rack limits of 98.3 inches in width and a height of 86 inches. That equipment "required a total of 5.5 million square feet of deck space."

Discussing the impact of barge ships such as LASH and Seabee on Army requirements, Hutson lauded recent moves of 105 mm ammo in LASH lighters. "Almost no dunnage was required, we had good cube utilization, and stevedore loading efficiency was about double that for a break-bulk ship." The small LASH barges also allowed load integrity.

In the simulated move of the five-division task force, Hutson identified two primary approaches which governed efforts to load the most effective mix of ships while limiting number of sailings. First was use of "the largest, fastest vessels to maximize each lift," the second "loading each class of cargo on the ships best suited to move it." Examples Hutson gave included driving vehicles on roll-on, roll-off vessels, loading of non-containerizable cargo first on Seabees, then on LASH vessels.

Being realistic, Hutson explained, "we recognized that all six roll-on, roll-off ships and the three Seabees now operating might not be available when needed in a contingency situation. But, we felt that LASH could sub on a one-for-one basis for both the Seabees and ro-ro vessels."

"However, it was necessary to reserve one Seabee for each division force to carry aircraft, watercraft, railway equipment cranes, and other outsize equipment."

Using data in Army computer systems which provide immediate readouts on numbers and types of vehicles, equipment and gear, the loading simulation was completed, and evaluated. Observations made by Hutson noted that:

★ Approximately 40,000 containers were needed for the five-division force, all but 5,891 of which could be loaded for move in container ships.

★ Moderate vehicle overhang of a quarter-inch or less on each side of a flat rack is allowable—and that this makes it possible to load 2½ ton trucks anywhere, above or below deck. Significance of that is obvious when one considers that 2,000 to 3,000 trucks of this type truck are included in each division force.

★ The Seabee is the "only modern ship that can carry aircraft of all Army units without sectionalization." In the test, 1,091 aircraft were loaded for 14 Seabee sailings with 76 other aircraft moving in 13 LASH sailings.

★ Tanks, although best suited for movement aboard ro-ros, can be moved on either LASH or Seabee. In the loading test, 216 of 1,023 tanks were put aboard LASH—thus reserving Seabees for aircraft and extremely oversized cargo.

★ Non-containerizable wheeled vehicles were most effectively loaded on ro-ros with large equipment such as landing craft and railroad cars being divided between LASH and Seabees.

According to Hutson, the transport ability study "concluded that for the movement of Army unit equipment, the Seabee system, without major modification, is the most versatile. It can carry all items of equipment organic to Army units. . . . and is the only ship that can carry Army aircraft efficiently without extensive sectionalization."

Size of the Seabee barge was a big factor in that conclusion—the barge being large enough to house railroad cars, or four helos simultaneously.

Hutson indicated that Army is seeking ways to move even more equipment in barge carriers as it continues its transportability studies. With rotor blades removed, he said, as many as six Cobra helos could be carried in a Seabee barge. With additional disassembly requiring only four additional man-hours, as many as 10 Cobras could be loaded into such a barge.

All of which led the director of the Army Transportation Engineering Agency to conclude that "barge carriers have unique capabilities to transport Army equipment, especially aircraft." □

Bell's air cushioned vehicles go...

What was an aerospace company representative doing at a barge carrier symposium? The answer, plenty, for over-the-beach military operations no longer involve only craft which move in the water.

Michael W. Vincent of Bell Aerospace Company's Buffalo office was on hand to present the combined sea transportation experts with a report on Bell's Air Cushioned Vehicles (ACVs).

It is easy to recall movies of John Wayne leading a troop of Marines in an assault on an enemy-held beach. They climbed laboriously down a network of rope ladders into a cumbersome landing craft that was heavily shelled while approaching the beach. No longer. Bell has been testing a free-flying, remote-controlled, one-sixth scale model of the Navy's Amphibious Assault Landing Craft.

The 14½-foot model is a scaled replica of the 160-ton air cushion landing craft being developed for Naval Ships Systems Command by Bell at New Orleans. The prototype now is being tested on Lake Pontchartrain there, undoubtedly amazing curious onlookers.

When completed, the full scale prototype will mark a new era in naval beachhead history. Air cushioned vehices are designed to transport men and material from ship to shore and beyond at speeds up to 50 knots—five times faster than conventional assault craft. The model, known as the JEFF (B), is undergoing a full circle of tests, over land, water and surf.

Another potentially useful ACV being tested is the Voyageur. Developed and built by Bell Aerospace Canada Division of Textron Canada Ltd. in Grand Bend, Ontario, the craft was built in 1971 and has logged more than 200 operating hours.

In the joint Army-Navy exercise, OSDOC II, for which MSC chartered a commercial container ship, Voyageur hauled standard 20-foot containers and cargo in high speed logistics operations. OSDOC II, Offshore Discharge of Container Ships, took place off Fort Story, Va., last fall.

The 65-foot vehicle has a 25-ton payload comparable to many cargo aircraft, large trucks, railroad cars and standard containers. Voyageur has an unobstructed 40x33-foot cargo deck with four rows of closely-spaced cargo tie-downs. The control cab has stations for an operator and navigator with a rear bench seat for four additional passengers. The elevated cab provides all-round vision with

.....over the water and

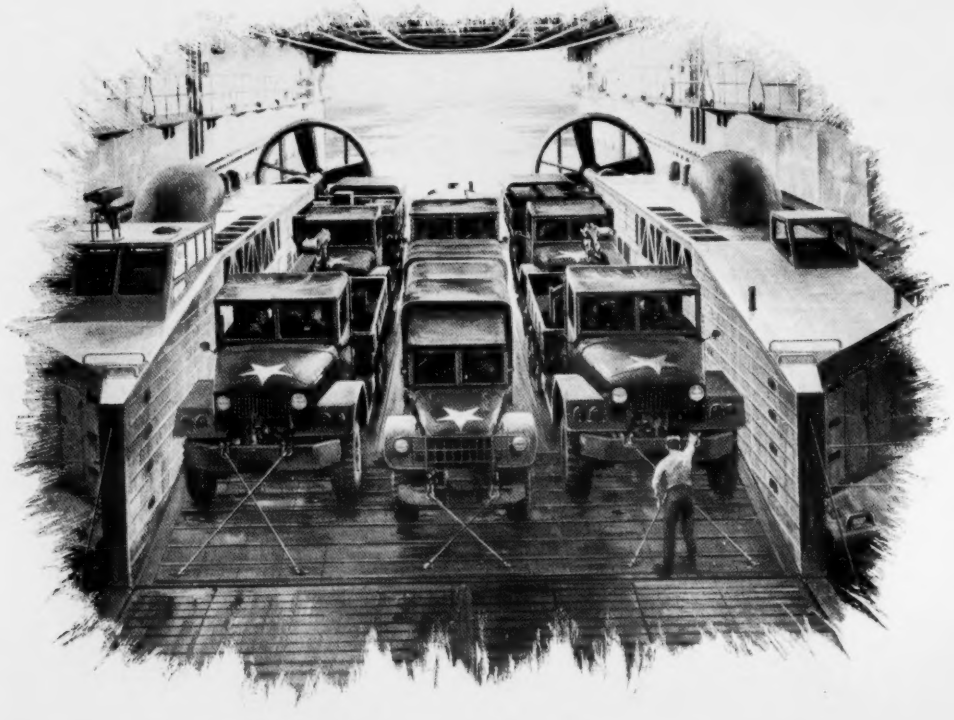
a clear view over the cargo deck
by two gas turbine aircraft-type en

The Voyageur is capable of ca
to 50 knots from ship to shore an
Army's landing craft and wheele
overwater speed of only 6 to 8 kn

The flat deck of Voyageur ma
transporting cargo containers, an
rapid discharge and turnaround h

Because air cushioned vehicles
also prevent the buildup of suppli
present a prime target for enem
High speed of the surface effect
vantage. They can be widely disp
event of a nuclear attack and a v
the beach is under fire by conven

With both Army and Navy co
of air cushioned vehicles, it's a c
of the future will have a new loo
their mobility, their flexibility, a
the lightning-like thrusts assault

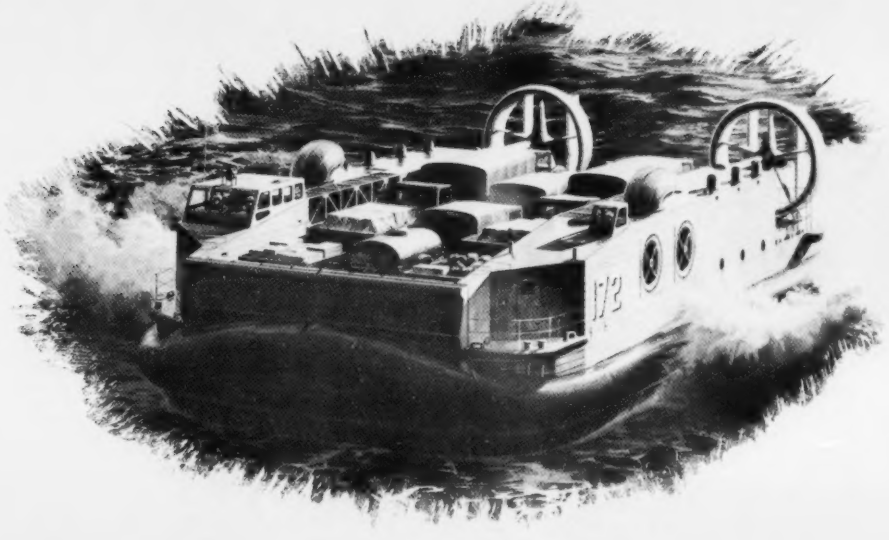


Michael Vincent
engineer for small
ion vehicles at B
space Co., a divisio
tron, Inc., Buffalo
1961 University o
nia graduate, he is
Navy officer. His
assignment was a
Patrol Air Cushio
Division 107. He j
after Navy dischar
since worked on v
cushioned vehicle
including those
Army and Navy.

nd through the woods

deck. The craft is powered
pe engines.
of carrying containers at up
re and inland. Presently, the
heeled amphibians have an
8 knots.
r makes it a good mode of
s, and its high speed allows
nd by the container ship.

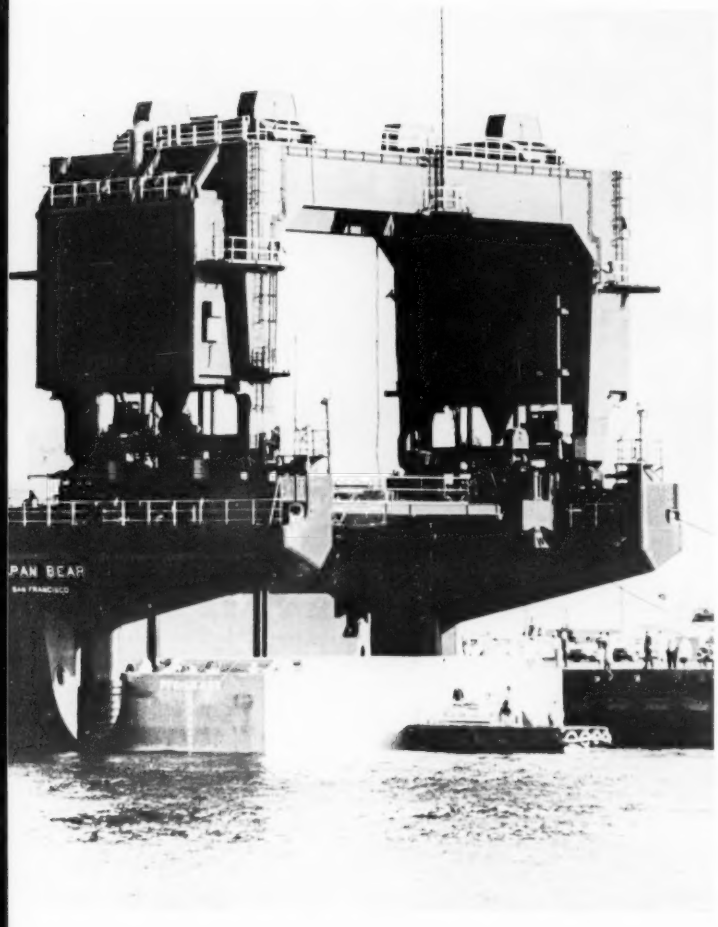
icles can move inland, they
upplies on the beach—which
enemy gunners and aircraft.
ffect craft offer another ad-
dispersed, a necessity in the
l a valuable asset even when
onventional aircraft.
y committed to exploitation
s a cinch that landing forces
w look—one which enhances
ty, and their ability to make
sault forces demand. □



cent is project mall air cush- at Bell Aero- vision of Tex- ffalo, N.Y. A ty of Califor- ne is a former His last Navy s as exec of shion Vehicle He joined Bell charge and has on various air icle projects, se for both y.

Fiberglass barges instead of steel?
Results are "excellent."

The state of the art



IN SERVICE: Fiberglass barges now in use are proving their worth.

More than 45 fiberglass LASH-type barges now are in full service, all owned by Pacific Far East Lines and built by Northrop Hueneme Corp. Results, according to Clifford Cassell are "excellent."

Fiberglass barges are built in Port Hueneme in a 100,000 square foot plant which opened its doors in March 1972 and launched its first barge in August of the same year.

In his remarks to those attending the MSC sponsored Military Barge Design and Shore Handling Symposium, Clifford Cassell reported on the state of the art in manufacture of fiberglass barges, impact of the barges on cargo movement costs and possible configurations of barges for amphibious military operations.

Fiberglass barges, a spin-off from Northrup's production of fiberglass aircraft components, begin with construction of a 31 by 60 foot bottom, largest single expanse of fiberglass ever designed. The bottoms are honeycomb core, sandwich structures with interior and exterior fiberglass skins approximately a half-inch thick. The honeycomb bottom core is 18 inches thick.

Layer upon layer of sinewy roving woven from fiberglass filaments are impregnated with resin and laid up to build up the skins. Result is a craft, all fiberglass, except for steel corner posts, which provides good insulation and is "stronger than steel." Cassell said the "fiberglass barge has a floor loading capacity of 15,000 pounds per square foot, steel only 1,500 pounds."

Fiberglass barges are dimension-wise just like steel—61 by 31 by 14 feet—and weigh about 55 short tons. Steel barges weigh 95 short tons.

"The 500 ton limit of the LASH ship's gantry crane makes empty barge weight extremely important," Cassell pointed out. "For every ton eliminated from the barge structure, an additional ton of weight cargo can be carried in the barge. This means each fiberglass barge can carry about 40 short tons (35 long tons) more cargo per trip. That adds up as much as 3,500 tons additional cargo to one LASH ship with almost no increase in operating cost."

Other advantages of the fiberglass barges cited by the Northrop Hueneme marketing and product development

manager included lack of corrosion damage, easier repair and lower structure weight which can cut fuel costs for the ship.

As Cassell sees it, "Value of the fiberglass barge depends to a certain extent on the amount of weight-limited cargo available. About 45 per cent of all barge trips will be weight limited in one form or another because of high density cargo or deck-loading restrictions."

"If a fiberglass barge makes 10 one-way trips per year, on a random basis, 4½ will be weight limited and carry 35 long tons more cargo. At an average operating cost of $20 per long ton, an operator saves over $3,000 per barge per year. If all 10 trips are weight limited, annual savings are $7,000."

Difference in maintenance costs were attributed by Cassell to the protective paint steel barges require—that fiberglass barges do not need—and repair costs. "Hand lay-up is easier and less expensive than comparable welded repair." Northrop Hueneme estimates annual cost savings in the repair and maintenance area per year are $805—in favor of fiberglass.

Northrop Hueneme now is developing a "refrigerated barge with 48 long tons more weight capacity and 2,500 cubic feet more space than a steel barge, since fiberglass barges can be insulated within the wall structure without losing cargo space."

In suggesting military applications for fiberglass barges, Cassell noted that steel corner posts now used soon could be replaced by fiberglass. "Anti-magnetic properties of a fiberglass barge would make it suitable for a mine-laying or pick-up barge."

He also suggested use of fiberglass barges as generator barges, for troop housing, as medical facilities and as floating, mobile repair ships. In response to a question he also indicated they could be built with ramps to make them better suited for over the beach troop deliveries—while pointing out that they had a foot less draft than steel barges carrying the same load. A fiberglass barge carrying a 50 ton vehicle draws only two feet of water. □

Clifford Cassell is manager of marketing and product development for the Northrop Hueneme Corp., which specializes in production of fiberglass barges for LASH carriers. Mr. Cassell, a former Air Force captain has a BA in economics from the University of Omaha and an MBA from Stanford University where he majored in transportation and marketing. He has been with Northrop Hueneme since July 1972.

FIBERGLASS BARGE: One of the first to be constructed, this barge is light and almost maintenance free.

Studying the barge ship,
Naval Facilities Engineering
Command finds ways to

Reap benefits

Milon E. Essoglou is assistant director of the plans and programs division, Naval Facilities Engineering Command in Alexandria, Va. He was graduated from the Massachusetts Institute of Technology in 1955 with a bachelor of science degree in Civil Engineering. Before joining NAVFAC in 1966, Mr. Essoglou worked with the Army Corps of Engineers in Arctic construction and frost effects research, and in private industry in nuclear weapons effects. One of his Navy assignments was as chief Navy evaluator for the offshore discharge of container ship tests.

Finding ways to use barges and barge ships in areas and ways they were not intended to be used is a mission of the Naval Facilities Engineering Command.

Using LASH and Seabee barges in support of military over-the-beach operations in a contingency hinges on military ability to handle the barges in the absence of adequate harbor facilities.

In addition, finding ways to use the barges to reduce and streamline cargo warehousing and handling is part of the overall mission.

Milon E. Essoglou, assistant director of the plans and programs division, NAVFAC, contended that barges can be compatibly integrated with and even improve a container supported distribution system.

He said the command has undertaken three tests to devise ways in which barges and barge ships can be employed in diverse situations.

They will determine how existing fleet air and surface

craft assets can be used in towing, handling, offloading and protecting barges.

They will also lead to development of hardware prototypes used in barge handling and determine the overall utility of barges in support of amphibious logistic operations.

Essoglou said barges are important now "because the barge ship is the modern break bulk ship as well as an unprecedented heavy lift transporter of outsized cargo.

"The logistic system is not fully containerized yet," he said. "Amphibious ships are pallet oriented and this fact will drive the assault logistics for some time. Furthermore, certain items like helicopters, tanks and trucks may always lend themselves well to a non-container transport.

"Irrespective of the advantages or disadvantages of LASH versus Seabee ships, we must be able to receive either of these ships' barges in an amphibious objective area and be able to use these ships to augment dwindling amphibious sealift assets. The reason being that there will be 23 LASH and three Seabee ships and there are no Seabee ships in the Pacific," Essoglou explained.

He said there is no question that barges will be used in resupply as well, "again requiring construction or expansion of suitable facilities in advance bases."

Efforts to date have been on the unloading of the non-self-sustaining container ships. In 1969 NAVFAC developed the concept of container cranes on highly deployable ships and other platforms such as semi-submersibles and push-towed, jack-up barges as satisfying the need for deep draft container ports in advanced base operations.

Problems were evident, however, such as the break-up of a floating causeway on its way from the beach to an elevated DeLong pier 500 feet offshore during a storm.

Shiploads of LASH or Seabee barges at an exposed beach would present problems of marshalling and protecting the barges against the elements, Essoglou added.

"What we believe to be the correct approach to the barge discharge problem," Essoglou said, is:

★ Rapid ship turnaround which means marshalling barges until they can be offloaded and until the ship arrives for retrograde.

★ Cargo from ship to shore must be carried with speed and efficiency.

★ Barge discharge facilities must be part of the container ship discharge and beach delivery system.

"All these requirements are achieved through cranes on elevated platforms, 58-by-90 feet, which could be LASH or Seabee transportable, and connected to the shore with elevated causeways," he said.

"The self-propelled causeway and the elevated causeway, in brief, are developments to benefit amphibious logistics throughout the assault and resupply phases and independent of cargo configurations. These are relatively cheap developments around existing hardware and skills resulting in cheap, simple, but productive systems that can be expanded as needed for larger operations," he said.

Through the exploratory development program of the Navy and Marine Corps, NAVFAC is conducting tests parallel with the development of hardware and techniques to satisfy amphibious assault and resupply requirements with identical components.

Essoglou said Pacific amphibious forces started providing men and material May 29 to conduct barge maneuvering and pallet unloading tests. "Similarly, with helicopter resources provided by Fleet Marine Force, Pacific, helicopter-barge tests will be conducted to determine the ability and problems in offloading barges with CH–53D helicopters. Later this year, barge marshalling tests will be conducted in San Diego.

He said these tests should achieve three objectives:

Provide data for interim capability—however limited, shed light on the direction of the required research and development program, and provide a basis for a more realistic and meaningful test of the use of LASH or Seabee barges and barge ships in conjunction with planned training exercises.

In addition to the test and development program, NAVFAC has contracted with Presearch, Inc., to study the military utility and feasibility of barges in amphibious logistics and especially if barges can reduce, delay or eliminate construction ashore for storage and warehousing.

Successful development of a waterjet propulsion unit will provide power for not only a self-propelled drive-on, drive-off causeway, but give the ability to sidecarry a warping tug on an LST," Essoglou said.

When test and studies now under way are successfully concluded, he said, "not only will they provide components, techniques and facilities for the discharge of barges, but also for the ship-to-shore movement of containers."

Essoglou noted that in regards to amphibious operations, "The barge ship should be thought of as a kind of dry-well LSD whose utility is well known. In terms of advance base or overseas military operations seen from an engineering point of view, the barge ship allows for the transport of enormous preassembled components—entire fuel tanks, pier and wharf sections, houses and buildings.

"The single barrier to be overcome is for logisticians and engineers to be willing to change their ways in order to reap the benefits of the barge ship. Our development program will most assuredly overcome the physical problems," he said. □

Pacific Far East Lines has helped to spark the 'sealift revolution' with the LASH's

Floating containers

"As professionals you are as aware as I that ocean transportation has undergone an absolute revolution in the past decade."

The occasion was the luncheon during the symposium hosted by MSC. The speaker was Robert U. Foster, vice president of Pacific Far East Lines. The words could have been spoken by any of a number of experts in the field of ocean transportation who were there. But, Foster has unique expertise. The Pacific Far East Lines (PFEL) has been and is a pioneer in implementation of a mode of transportation that helped spark the sealift revolution, the LASH (lighter aboard ship).

"New and monstrous vessels are afloat today carrying containers to all parts of the world," he continued. "By many, the container ship is judged to be *the* method of shipping goods, LASH is viewed by some as a competing force to containerization. I don't agree. LASH in itself is a container ship."

His comment is well taken. The LASH often is misrepresented by those who consider it to be something other than a container ship because it carries barges in addition to standard containers. Each barge carried by LASH vessels is basically a huge floating container capable of carrying a large volume of outsized cargo which won't fit into a standard container.

"From a long range standpoint, LASH and container ships should not be considered as competing concepts. Nor should they be regarded as mutually exclusive categories of carriers."

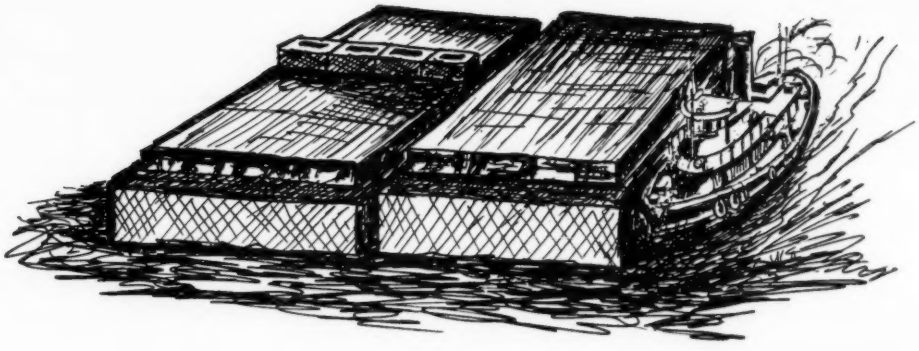
The ubiquitous question inevitably arises when mention is made of ocean carriers. LASH is not an exception.

What can LASH do for the military? Foster answers, "Based on a configuration of 50 lighters and 550, 20-foot containers, the vessel's cargo capacity is 1,567,500 cubic feet." The barges are stowed in barge cells, stacked two, three or four high. If both the barge crane and the container crane are operating simultaneously, the loading capacity could be 2,144 long tons per hour.

Capacity and quick loading and off-loading capability of the LASH makes it an unquestionable asset in a wartime situation. Foster continued, "With this in mind, we are reminded of the position our fleet was in during the recent Vietnam conflict. Oftentimes, many of my company's conventional cargo vessels were held in Saigon 50 to 80 days awaiting discharge with only two to three thousand tons of military cargo aboard. Had the LASH been available and operating at the time, there would have been vast improvement in our operation and ultimately, as a result, our military mission."

How is that possible? "In time of emergency, the LASH can be fully equipped to be self sufficient," Foster said. Men and material can be placed in underdeveloped port areas. "Over the beach discharging with barges carried aboard a LASH vessel would be simple." Barges could also be used, Foster said, for such various military operations as warehouse space, living quarters, headquarters for beach operations, field hospitals, communications centers or even temporary docks to discharge cargo from conventional vessels. This list goes on and on.

In summing up his luncheon remarks, Foster listed a few examples of LASH versatility. "The barge, which is an extension of the hatch of the ship itself, can go where no conventional container ship can go, where no roll-on roll-off ship can go, where no conventional break bulk ship can go. She can carry any of the cargoes that can go aboard any conventional break bulk ship, and a good number of the cargoes that the container ship just can't handle." It would seem that the LASH is a combination of the best that all of today's modern vessels have to offer and some that they can't. □



Robert U. Foster is vice president of the Pacific Far East Lines. He has been with the company for 20 years, beginning as a district freight agent. Foster also is president of the Propeller Club, Port of Washington, D.C., and first vice president of the National Defense Transportation Association's D.C. chapter. He is assistant chairman of the 1973 American Merchant Marine Conference Committee for the 47th annual convention of the Propeller Club to be held in San Francisco Oct. 10-12.

Containers serve many purposes as

Marine shelters

Like members of all of the military services, Marine Corps planners are grappling with mobility problems posed by the advent of the container ship.

As Lt. Col. James J. Harp indicated in his presentation during the barge symposium, the Marines are well aware that Navy amphibious shipping is somewhat less plentiful than desired, and that there must be "increasing dependence on merchant shipping for assault follow-on and resupply in amphibious operations."

But, the Marine Corps is not overly concerned about the merchant marine trend toward wider use of container and barge carrying ships. "We see some excellent potential to enhance the readiness of the fleet marine forces," Colonel Harp said.

Recognition of this potential, he reported, surfaced during a Marine study on shelter requirements for the fleet marine force, air and ground. Shelters, in the context used by the Marine Corps Development Center staff member, refers to any container, tent, box or mobile enclosure which can be used to house material or people.

Thrust of the Marine Corps study of shelters has been toward standardization—thus making them less costly, more transportable, and more useful.

An inventory of Marine Corps shelters revealed that there were 75 different types—and 119 models. Twenty were mounted on trucks dedicated for their movement, 16 were fixed on trailers and six were tents.

But, variety of types is not the only problem, he said. The study indicated that "management of this $50 million inventory (was) fragmented into every commodity area and technical group." And procurement of Marine Corps shelters is dictated by the end item rather than its impact on the logistical system. Result is a series of procurement actions with most buys being for limited quantities. Another finding also involved cost. Installation of equipment, fixtures or devices, called appointments by Colonel Harp, added to the initial cost of the shelter.

For instance, Colonel Harp detailed costs for one $8 \times 8 \times 20$ foot box used to house electronic test equipment. The shelter cost $8,800, and the trailer needed to move it cost another $9,000. Engineering costs totaled $12,000 and equipment used required an investment of another $40,000.

Objectives of the Marine Corps study are to develop a more austere family of shelters that can be used by all units, and to insure that they can be transported over sea and land and through the air.

Other goals are to insure that they can be moved and set up in minimum time and that shelters can be hooked together to form larger units. Planners also hope to cut costs by developing a standard catalog of appointments, by using commercial designs whenever possible, and by adopting a more effective plan for securing and using corps shelters.

An example of an area for improvement, the colonel noted, is use of commercial paint which has a 20-year warranty rather than buying paint manufactured to meet military specifications which has only a seven-year warranty. The Marine Corps hopes to encourage manufacturers to offer the best possible product, rather than limiting them to military specs.

In developing plans for a standard family of containers, Marine Corps experts decided on two basic designs, a small shelter in four basic types and a larger family of shelters in three types. All small shelters are designed to meet—so that they can be expanded into larger units. Emphasis in design of larger shelters is on packaging them to meet standards of the International Organization for Standardization.

A standard shipping envelope permits use of common handling and transportation equipment. Large shelters also are designed for hook-up to one another, and an effort also is being made to standardize appointments. What it all adds up to, Colonel Harp said, is to "reduce cost through volume procurement."

Colonel Harp indicated that the Marines hope to use a standard 20-foot shelter which can be moved by rail, truck, fixed wing aircraft and helos.

Three small shelters designed for Marine Corps use are $8 \times 8 \times 20$ feet. One can be knocked down and four of the shelters can be shipped in a single envelope. All have access panels, lighting, wall receptacles, and a grid of

mounting points for equipment installation.

Designed for use as supply centers, maintenance shops or forward warehouses are 20×32 and 32×72 foot knock-down shelters and a similar 30×72 foot structure. Another large knock-down shelter, 60×120 feet, is intended for use as an aviation supply and maintenance structure. All are insulated, have installed lighting and may be erected on soil, pavement, or matting. None of the larger units include flooring.

Target costs, Colonel Harp said, range from $5 to $30 a square foot. Weights range from 3,000 to 9,000 pounds. All shelters can be lifted by a CH 53 helicopter. Since all units can be joined, possibilities for assembly of a large structure are limited only by terrain features at the assembly site.

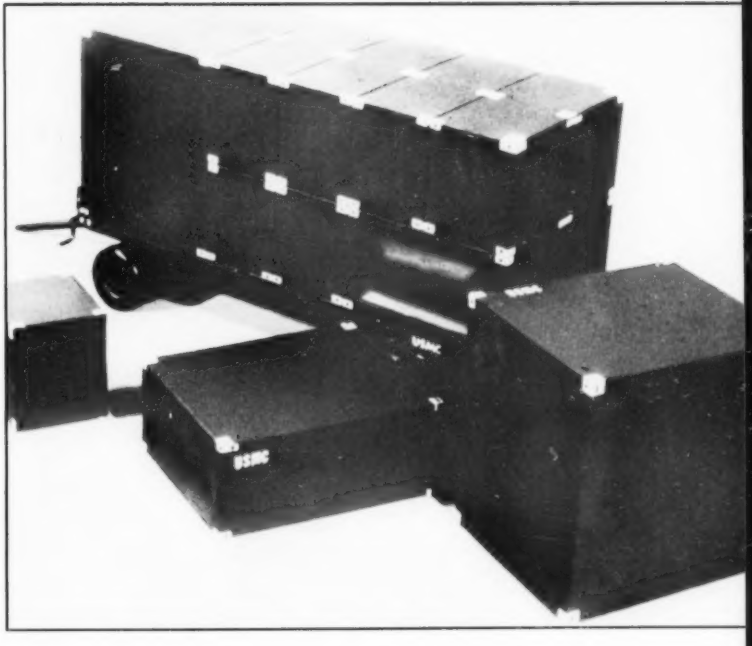
Providing ground mobility for the shelters, Colonel Harp said, "caused a great deal of consternation. It was evident, when the ISO dimensions were accepted, that the traditional truck or trailer would not fill the bill. Yet we certainly did not want another trailer dedicated to movement of shelters."

Result was development of a concept for a trailer that "would be low cost, lightweight, air transportable and capable of self loading and unloading shelters up to 12,500 pounds."

The designed trailer can handle loads up to 50,000 pounds, its bed mates with loading doors of a C–141 or C–130 aircraft, and four trailers can be towed in tandem by a prime mover, even over rough terrain.

The Marines also have developed a fuel-water module which has a capacity of 1,200 gallons. Eighteen can be shipped in one 8×8×20 foot envelope. An additional module contains pump, filtration, hose and power supply units. Largest of the intermodal containers which meet Marine requirements for movement of shelters is the 8×8×20 foot military van, or commercial counterpart. But, the Marines still are studying "possibility of reducing the height dimension of these containers so that (they) could use these units in the materials handling systems and in holds of ships," Colonel Harp said.

"If this can be achieved, containers could be used as early as D-day in the assault echelon. Replenishment of



SHELTERS: The Marines are finding ways to use containers to house men and machinery.

afloat forces would be possible and the ability of support units to utilize available shipping would be enhanced. Once ashore the trailer will provide a vehicle to handle the variety of module combinations possible."

The Marine Corps sees no great problem handling containers ashore. To improve their adaptability, they are developing materials such as "on-fast," which is applied to the soil and provides a hardened base for the shelters. "Mo-mat," a fiberglass sheet which is a current inventory item, provides an adequate cover from the high water mark to the ramp of the lighterage.

Marines also are working on problems of helolift of shelters, primarily those of container oscillation encountered in single-suspension hookups. With a two-point suspension system, they have been able to fly shelters at 80 knots without spinning. Another problem being worked on is movement of 22.5 ton loads in the surf zone. To date, the best solution has been loading the box on a trailer at the ship, thereby handling it only once in ship to shore movement. Self-propelled causeways are another means of moving trailer and box ashore now under study, along with use of more conventional lighters.

Most difficult of current problems, according to Colonel Harp, and "most costly," is that of moving the container out of the cell and over the side of the ship into a lighter or other vehicle. Three alternatives include "the barge mounted crane, the ship (LST) carried crane, and placement of the crane directly on the container ship."

"More work is needed and the problem falls into three broad categories," the colonel said. These include military "ability to handle barges, break bulk and container ships—Navy capability to replenish fleet marine forces afloat—and service ability to handle non-self-sustaining container ships.

"The Navy," Colonel Harp reported, "is preparing to move to advance development efforts on the first. Exploratory work is well under way in the remaining two areas and should warrant movement of one or both into advanced development as soon as funding is available."

"We at the Marine Corps Development Center see the container as a series of unsolved opportunities. We see dramatic pay-offs in the use of containers. We can see these benefits realized in personnel and dollar savings, or, put another way, the reduction of our logistical tail."

Lt. Col. James Harp heads the logistics support section of the Marine Corps Development and Education Command at Quantico, Va. A graduate of the University of Nebraska, he assumed his current duties in early 1973. In previous assignments he has served as a platoon commander, and has commanded both a Marine engineer company and a battalion. He also has held operations and logistics staff positions.

Can commercial carriers resupply combat stores ships? The answers were found in

Charger Log VII

Thomas Mansfield is head of the mobile support systems group, Naval Ship Research and Development Center. Holder of a MS from Drexel University and a BS from Virginia Polytechnic Institute, he has been with his present command since 1950. He currently is involved in a number of research and development projects aimed at better utilization of merchant ships in support of naval missions.

In December 1972, Chief of Naval Operations Adm. Elmo R. Zumwalt sponsored a test to probe the feasibility of resupplying combat stores ships by commercial carriers.

The test was called Charger Log VII and involved the USS San Diego and the LASH Italia. Tom Mansfield briefed the assembled marine transportation specialists on the background leading up to the test, objectives of the test and the results.

According to Mansfield, commercial shipping has been used for point-to-point resupply of overseas bases for years, but never for direct resupply of combatant ships while under way. The reduction of Navy logistic support forces requires development of a replenishment-at-sea capability from commercial vessels.

"To carry out this test without assistance from port facilities, the LASH type ship was selected as the most self-sustaining of the modern commercial ships," he said.

In the test, palletized cargo and gondolas were lifted by helicopter from Italia's LASH lighters to the deck of San Diego while both ships maintained a 20-knot speed. The LASH Italia was on a scheduled run from the United States to Europe.

"Following underway operations, the LASH proceeded to her regular port of call, Rota, Spain, and discharged the lighters. These were unloaded by helo and flown to the San Diego without assistance from the beach. This simulated delivery to a remote, sheltered harbor near the scene of wartime operations," he added.

According to Mansfield, "The Charger Log VII test showed that LASH ships offer operational uses both in peace and wartime for underway vertical replenishment and unassisted in-port resupply."

He said some of the advantages of the LASH are that "elaborate port facilities are not required; only minor adjustments must be made to cargo in preparation for vertical replenishment operations and the LASH offers low cost and point-to-point cargo transportation."

Mansfield concluded that the LASH is "a step forward, but does not completely achieve the objectives of resupply of Navy combatant ships." He explained that vertical replenishment is feasible but present some problems that must be ironed out.

Charger Log VII was successful in that it delineated exactly what those problems are.

Readiness, Key to Peace

The United States Readiness Command

"Readiness: Quality of being prepared to act or respond to a given situation." Webster's New World Dictionary.

That's the primary mission of the United States Readiness Command or USREDCOM as it is listed in the military dictionary of acronyms.

Its mission—assigned by the Joint Chiefs of Staff—is to "exercise control of CONUS-based Army and Air Force general purpose forces available to reinforce other unified commands worldwide."

USREDCOM representative at the barge symposium was Cmdr. Don L. Huising of the Directorate of Logistics, J–4. He was there to acquaint symposium attendees with activities of the USREDCOM Joint Sealift Movements Board and to take part in a regular meeting of the board at MSC headquarters on May 31 and June 1.

Cmdr. Don L. Huising is transportation and logistics officer of the U.S. Readiness Command. He attended the University of Colorado with a NROTC scholarship and received a bachelor of science degree in Business Administration in 1952. He received his master's degree in Management from the Navy Postgraduate School, Monterey, Calif. in 1966. Shipboard tours include: USS Rankin (AKA–103); USS Leary (DDR–879); and USS Pine Island (AV–12).

The USREDCOM Joint Sealift Movements Board, or JSMB, is, in a sense, a spin-off of the USREDCOM Joint Air Movements Board which deals with doctrines and techniques for air movement of military forces.

As Commander Huising reported, USREDCOM initiated a study in 1972 to determine whether or not a body similar to the existing Joint Air Movements Board was vital to effective utilization of sealift assets.

"It was determined," he said, "that a distinct potential existed for fruitful work in this area." Evaluation of efforts by other service agencies indicated that "none were approaching the overall aspects of unit movements by sea." Result was approval by JCS of a USREDCOM recommendation for establishment of the JSMB.

In September 1972 the board was established with inter-service representation. Scope of its activity is the "entire spectrum of activities connected with the deployment of USREDCOM forces by sea, except amphibious assault."

In briefing the symposium participants on board operations, Commander Huising noted that the board met quarterly, or on call of the president. Reports of all meetings go to the Commander in Chief, USREDCOM and all headquarters, commands and agencies represented on the board, including MSC.

Functions include examination of planning, preparation, packaging, unitization, inspection, training, interagency coordination and organizations of units for sea deployment.

Board members also review unit loading and unloading techniques, responsibilities and practices. In addition, they receive all joint exercise reports and evaluate utilization of transportation assets—and all modes of transportation.

Analyses made by the board members provide a basis for identifying areas which demand or warrant additional study. A primary result of board actions is the formulation of recommendations to specific Defense agencies which concern development of joint procedures and techniques. Objective, throughout, is to develop greatest possible capability and most effective use of available sealift resources.

The two-day session was the third regular meeting of the JSMB. In reviewing results of the two previous meetings, Commander Huising noted that MSC now is making, per JSMB recommendation, a detailed analysis of sealift requirements involved in deployment of an entire airmobile division. A follow-on to this study, Commander Huising said, will be an analysis of the problems of moving a division from its home base to the appropriate seaport. The second project involves the review and adoption of jointly agreed upon sealift planning factors and data for users of JCS Joint Operations Planning System (JOPS). This study has been assigned to LANTCOM's representatives and is being resolved in conjunction with the JOPS interim software efforts.

USREDCOM is taking the lead on a third project recommended by the board—preliminary planning for a possible sealift command post exercise as part of another joint training exercise already scheduled.

In summarizing accomplishments of the JSMB during its short life, Commander Huising said the group "has an important role to play in the deployment of forces at sea." Recognizing the "enthusiastic support" the board has received from participating agencies, he concluded his remarks by saying that the board should have a "beneficial and productive future."

Motto of USREDCOM is Readiness—Key to Peace. That might be amplified with another similar phrase, Sealift—Key to Readiness. □

Bell's air cushioned vehicles go over the water and through the woods. *Story page 13*

Superintendent of Documents
Government Printing Office
Washington, D.C. 20402

(SUBSCRIPTION FORM)

ENCLOSED find $5.50 for a subscription to SEALIFT, the magazine of the Navy's Military Sealift Command, to be mailed to the following address for 1 year. (Foreign, $6.25.) Domestic includes FPO and APO.

NAME_____

ADDRESS_____ ZIP Code_____

(Make checks or money orders payable to the Superintendent of Documents.)

MILITARY SEALIFT COMMAND
DEPARTMENT OF THE NAVY
WASHINGTON, D.C. 20390

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
DEPARTMENT OF THE NAVY

U.S.MAIL

U.S. GOVERNMENT PRINTING OFFICE: 1973—516-439/6